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| 09/437,265 | 11/10/1999 | TOSHIHIKO NAKATA | 501.37854X00 | 7750 |
| 20457 | 7590 | 12/19/2003 | EXAMINER | |
| ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-9889 | | | LEE, SHUN K | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2878 | |

DATE MAILED: 12/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/437,265

Applicant(s)

NAKATA ET AL.

Examiner

Shun Lee

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ~~☒~~ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-14 and 17-22 is/are pending in the application.
- 4a) Of the above claim(s) 7-10 and 17-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 11-14 and 20-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/14/99 & 9/24/03 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Claims 7-10 and 17-19 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 9.
2. This application contains claims 7-10 and 17-19 drawn to an invention nonelected with traverse in Paper No. 9. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Information Disclosure Statement

3. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. Applicant appears to argue (last paragraph on pg. 8 of remarks filed 24 September 2003) that a listing of references in the specification is a proper information disclosure statement. Applicant should note that a listing of information may not be incorporated into the specification of the application (see MPEP § 609 A(1)) and that a proper information disclosure statement complies with both 37 CFR 1.97 and 37 CFR 1.98. Applicant is also advised that the date of any

submission of an information disclosure statement will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

Drawings

4. The drawings were received on 24 September 2003. These drawings are not acceptable. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 60c, 60d, 61c, and 61d (pgs. 20 and 21); and 69 (pg. 23). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

5. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

6. The abstract of the disclosure is objected to because of the length. Correction is required. See MPEP § 608.01(b).
7. The disclosure is objected to because of the following informalities:
 - (a) on pg. 16, "transmits" in line 24 should probably be --reflects-- (see lines 4-7 on pg. 15 and dichroic mirror 25 in Fig. 3);
 - (b) on pg. 18, "row bar 20" in lines 4-5 should probably be --row bar 2a-- (see Fig. 1 and 37 CFR 1.84(p)(5)); and
 - (c) on pg. 23, "DVD" in line 2 should probably be --DUV--.

Appropriate correction is required.

8. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

9. Claim 11 is objected to because of the following informalities: in claim 11, "an optical image" on lines 14-15 should probably be --said optical image--. Appropriate correction is required.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 1-4, 11-14, and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida *et al.* (US 6,212,761) in view of Shafer *et al.* (US 5,717,518).

In regard to claims **11-14** and **20**, Yoshida *et al.* disclose (Figs. 1-3 and 5) an apparatus for measuring dimensions and alignment error of thin film magnetic heads formed on a substrate, comprising:

- (a) a magnetoresistance effect element (MR head element 30, 31, 51, 52, 53; column 1, lines 16-21; column 4, lines 45-56) and a resistance detector element (RLG 32, 54, 55, 56; column 1, lines 21-26; column 4, lines 36-37) which is formed for monitoring a lapping process, both of which are formed on a substrate (*i.e.*, wafer); and
- (b) an optical measuring device (20) with detecting means for detecting dimensions and alignment error (Fig. 5; column 5, lines 50-59) of said magnetoresistance effect element and said resistance detector element formed on the substrate.

The apparatus of Yoshida *et al.* lacks that the detecting means of the optical measuring device (20) detects the geometrical information from an image signal that has been photoelectrically converted by an image pick up means from an optical image of the substrate obtained by an imaging means, wherein the substrate is illuminated by an illuminating means with 300 nm (or less such as 248 nm, 266 nm, 213 nm, or 200 nm) illuminating light emitted from a light source. Shafer *et al.* teach (Figs. 4 and 6) a geometrical information detecting means (96) for detecting geometrical information from an image signal (94) that has been photoelectrically converted by an image pick up means (92) from an optical image of the substrate obtained by an imaging means (86, 90), wherein a substrate (*i.e.*, wafer 82) is illuminated by an illuminating means (63, 65, 67, 69) with 300 nm or less (*e.g.*, 200 nm to 400 nm; column 4, lines 10-34) illuminating light emitted from a light source (61) for an inspection apparatus having better optical resolution (column 3, lines 19-41). Shafer *et al.* also teach (column 9, lines 4-27; column 10, lines 10-26) that the inspection apparatus compares the measured data with stored data in order to obtain defect (*e.g.*, a difference in an element dimension from design specifications) and feature classification. Therefore it would have been obvious to one having ordinary skill in the art to provide an 300 nm (or less) light illuminating with an imaging means as the optical measuring device in the apparatus of Yoshida *et al.*, in order to obtain higher optical resolution inspections as taught by Shafer *et al.*

In regard to claims **1-4**, the method steps are implicit for the modified apparatus of Yoshida *et al.* since the structure is the same as the applicant's apparatus of claims 11-14.

In regard to claim **21** (which is dependent on claim 1) and claim **22** (which is dependent on claim 11), the modified method and apparatus of Yoshida *et al.* lacks an explicit description of displaying the measured results of at least one of the element dimension variations or alignment error distribution on a display. However, Yoshida *et al.* also disclose (Figs. 1 and 2) that process control comprises a computer with display. Therefore it would have been obvious to one having ordinary skill in the art to display process control geometrical information such as element dimension variations or alignment error distribution (as illustrated in Fig. 5) on the computer display in the modified method and apparatus of Yoshida *et al.*

13. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida *et al.* (US 6,212,761) in view of Shafer *et al.* (US 5,717,518) as applied to claim 1 above, and further in view of Suzuki *et al.* (US 5,471,084).

In regard to claim **6** which is dependent on claim 1, the modified method of Yoshida *et al.* lacks that the magnetoresistance effect element and the resistance detector element for monitoring the lapping are covered with end face protection films. Suzuki *et al.* teach that (column 1, lines 12-30) that magnetoresistance thin films are very active so that surface protection films are need to prevent oxidization and damage. Therefore it would have been obvious to one having ordinary skill in the art to provide end face protection films for the magnetoresistance effect element and the resistance

detector element in the modified method of Yoshida *et al.*, in order to prevent oxidization and damage as taught by Suzuki *et al.*

Response to Arguments

14. Applicant's arguments with respect to amended independent claims 1 and 11 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shun Lee whose telephone number is (703) 308-4860. The examiner can normally be reached on Monday-Thursday.

Art Unit: 2878

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (703) 308-4852. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

SL
December 8, 2003


DAVID PORTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800